AMENDMENTS TO THE CLAIMS

2	(Cancelled)

(Cancelled).

1.

- 3. (Cancelled).
- 4. (Cancelled).
- 5. (Cancelled).
- 6. (Cancelled).
- 7. (Cancelled).
- 8. (Cancelled).
- 9. (Cancelled).
- 10. (Cancelled).
- 11. (Cancelled).
- 12. (Cancelled).
- 13. (Cancelled).
- 14. (Cancelled).
- 15. (Cancelled).

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16. (Currently amended) An ink jet recording sheet comprising a substrate layer consisting essentially of a material selected from a polyamide, a polyester, or a polyolefin and an ink-receiving layer that is overlaid directly onto said substrate layer, wherein said ink-receiving layer comprises the resin composition according to claim 10. (a) a major component of a water-absorbing polymer compound having a weight average molecular weight ranging between 10,000 and 300,000 represented by the formula (I),

$$\frac{-\left\{\begin{array}{cc} AX^1 & AR^1 \end{array}\right\}}{(I)}$$

wherein A consists of

$$+CH_2CH_2O+$$
 and $+CH_2CHO+$

with a manner of linkage therebetween being

$$-\left(\text{CH}_{2}\text{CH}_{2}\text{O}\right)_{\overline{\text{m}}} \left(\text{CH}_{2}\text{CHO}\right)_{\overline{\text{n}}} \left(\text{CH}_{2}\text{CH}_{2}\text{O}\right)_{\overline{\text{p}}}$$

wherein m, n, and p represent integers greater than or equal to 1, and a weight ratio calculated on the basis of each recurrence number m, n, and p predetermined to be: $44 \times (m+p)/(molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms) x n = <math>94/6$ to 80/20,

and the weight ratio calculated on the basis of each recurrence number m and p, p/(m+p) is predetermined to be more than or equal to 50 percent by weight;

Y represents a hydrocarbon group having two or more carbon atoms; X¹ represents a residue of an organic compound having two active hydrogen groups; and R¹ represents a residue of a dicarboxylic acid compound;

and (b) a cationic polymer compound having a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

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$$\frac{\left(CH_{2}CH_{2}\right) -}{(II)}$$

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III)

$$\begin{array}{c} - \left(CH_2CH - \right) \\ COOR^2 \end{array}$$

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (IV)

$$\begin{array}{c|c}
-(CH_2 CH) & R^4 \\
| & | \\
CONH - R^3 - N - R^5 \cdot X - R^6 \\
\hline
 & R^6
\end{array}$$
(IV)

wherein R³ represents an alkylene group having 2 to 8 carbon atoms, R⁴ and R⁵, respectively, represent an alkyl group having 1 to 4 carbon atoms, R⁶ represents an alkyl group having 1 to 12 carbon atoms, an aryl alkyl group having 7 to 12 carbon atoms, or an alicyclic alkyl group having 6 to 12 carbon atoms, and X⁻ represents a halogen ion, CH₃OSO₃, or C₂H₅OSO₃.

17. (Original) A method of ink jet recording using an ink jet recording sheet according of claim 16, comprising the step of adsorbing small droplets of a water-based color ink applied to the ink-receiving layer.

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18. (Currently amended) A method of producing an ink jet recording sheet comprising the steps of extruding a resin composition selected from the group consisting essentially of a polyamide, a polyester, and a polyolefin that constitutes a substrate layer into a sheet form, while extruding a resin composition for ink jet recording sheet according to elaim 10 into a sheet form directly onto said substrate layer, concurrently with the substrate layer, and forming layers from both of said resin compositions, wherein the resin composition comprises (a) a major component of a water-absorbing polymer compound having a weight average molecular weight ranging between 10,000 and 300,000 represented by the formula (I).

$$\frac{-\left\{\begin{array}{cc} AX^1 & AR^1 \end{array}\right\}}{(I)}$$

wherein A consists of

with a manner of linkage therebetween being

$$- \left(CH_2CH_2O \right)_{\overline{m}} \left(CH_2CHO \right)_{\overline{n}} \left(CH_2CH_2 O \right)_{\overline{p}}$$

wherein m, n, and p represent integers greater than or equal to 1, and a weight ratio calculated on the basis of each recurrence number m, n, and p predetermined to be: $44 \times (m+p)/(molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms) x n = <math>94/6$ to 80/20,

and the weight ratio calculated on the basis of each recurrence number m and p, p/(m+p) is predetermined to be more than or equal to 50 percent by weight;

Y represents a hydrocarbon group having two or more carbon atoms; X¹ represents a residue of an organic compound having two active hydrogen groups; and R¹ represents a residue of a dicarboxylic acid compound;

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and (b) a cationic polymer compound having a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

$$\frac{\left(CH_{2}CH_{2}\right) -}{(ID)}$$

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III)

$$-\left(CH_2CH-\right)$$
 $COOR^2$

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (IV)

$$\begin{array}{c|c}
-(CH_2 CH) & R^4 \\
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wherein R³ represents an alkylene group having 2 to 8 carbon atoms, R⁴ and R⁵, respectively, represent an alkyl group having 1 to 4 carbon atoms, R⁶ represents an alkyl group having 1 to 12 carbon atoms, an aryl alkyl group having 7 to 12 carbon atoms, or an alicyclic alkyl group having 6 to 12 carbon atoms, and X⁻ represents a halogen ion, CH₃OSO₃, or C₂H₅OSO₃.

- 19. (Cancelled).
- 20. (Cancelled).
- 21. (Cancelled).

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22. (Currently amended) An ink jet recording sheet comprising a substrate layer consisting essentially of a material selected from a polyamide, a polyester, or a polyolefin and an ink-receiving layer that is over-laid directly onto said substrate layer, wherein said inkreceiving layer comprises the resin composition according to claim 12 (a) a major component of a water- absorbing polymer compound having a weight average molecular weight ranging between 10,000 and 300,000 represented by the formula (I),

$$\frac{-\left\{AX^{1}, AR^{1}\right\}}{(I)}$$

wherein A consists of

$$+(CH_2CH_2O)$$
 and $+(CH_2CHO)$

with a manner of linkage therebetween being

$$\frac{\text{CH}_{2}\text{CH}_{2}\text{O}}{\text{m}} \frac{\text{CH}_{2}\text{CHO}}{\text{m}} \frac{\text{CH}_{2}\text{CH}_{2}\text{O}}{\text{p}}$$

wherein m, n, and p represent integers greater than or equal to 1, and a weight ratio calculated on the basis of each recurrence number m, n, and p predetermined to be: 44 x (m+p)/(molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms) x n = 94/6 to 80/20,

and the weight ratio calculated on the basis of each recurrence number m and p, p/(m+p) is predetermined to be more than or equal to 50 percent by weight;

Y represents a hydrocarbon group having two or more carbon atoms; X¹ represents a residue of an organic compound having two active hydrogen groups; and R¹ represents a residue of a dicarboxylic acid compound;

and (b) a cationic polymer compound having a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

$$\frac{-(CH_2CH_2)-}{(II)}$$

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III),

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (V),

$$\begin{array}{c|c}
-(CH_2 CH -) & R^4 \\
 & | & | \\
 & CONH - R^3 - N - H \cdot X^{-1} \\
\hline
 & R^5
\end{array}$$
(V).

- 23. (Previously presented) A method of ink jet recording using an ink jet recording sheet according to claim 22, comprising the step of adsorbing small droplets of a water-based color ink applied to the ink-receiving layer.
- 24. (Currently amended) A method of producing an ink jet recording sheet comprising the steps of extruding a resin composition that constitutes a substrate layer into a sheet form, while extruding a resin composition for ink jet recording sheet according to elaim 12-into a sheet form onto said substrate layer, concurrently with the substrate layer, and forming layers from both of said resin compositions, wherein the resin composition comprises (a) a major component of a water- absorbing polymer compound having a weight average molecular weight ranging between 10,000 and 300,000 represented by the formula (I),

$$\frac{-\left\{ AX^{1} AR^{1} \right\}}{(I)}$$

wherein A consists of

$$-(CH_2CH_2O)$$
 and $-(CH_2CHO)$

with a manner of linkage therebetween being

$$- \left(CH_{2}CH_{2}O \right)_{\overline{m}} \left(CH_{2}CHO \right)_{\overline{n}} \left(CH_{2}CH_{2}O \right)_{\overline{p}}$$

wherein m, n, and p represent integers greater than or equal to 1, and a weight ratio calculated on the basis of each recurrence number m, n, and p predetermined to be: $44 \times (m+p)/(molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms) x n = <math>94/6$ to 80/20,

and the weight ratio calculated on the basis of each recurrence number m and p, p/(m+p) is predetermined to be more than or equal to 50 percent by weight;

Y represents a hydrocarbon group having two or more carbon atoms; X¹ represents a residue of an organic compound having two active hydrogen groups; and R¹ represents a residue of a dicarboxylic acid compound;

and (b) a cationic polymer compound having a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

$$\frac{-\left(CH_{2}CH_{2}\right)-}{\left(II\right)}$$

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III),

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (V),

$$\begin{array}{c|c}
-(CH_2 CH-) & R^4 \\
| & | \\
CONH-R^3-N-H \cdot X^- \\
\hline
R^5 \\
(V).
\end{array}$$

25. (Previously presented) An ink jet recording sheet comprising a substrate layer selected from the group consisting essentially of a polyamide, a polyester, and a polyolefin and an ink-receiving layer that is overlaid directly onto said substrate layer, wherein said ink-receiving layer comprises (a) a major component of a water-absorbing polymer compound represented by the formula (I),

$$-\left\{AX^1 AR^1\right\}_{(I)}$$

wherein A consists of

$$+$$
 CH_2CH_2O and $+$ CH_2CHO $+$

with a manner of linkage therebetween being

$$-\left(CH_{2}CH_{2}O\right)_{m}\left(CH_{2}CHO\right)_{n}\left(CH_{2}CH_{2}O\right)_{p}$$

wherein m, n, and p represent integers greater than or equal to 1, and a weight ratio calculated on the basis of each recurrence number m, n, and p predetermined to be: $44 \times (m+p)/(molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms) <math>\times$ n = 94/6 to 80/20,

and the weight ratio calculated on the basis of each recurrence number m and p, p/(m+p) is predetermined to be more than or equal to 50 percent by weight;

Y represents a hydrocarbon group having two or more carbon atoms; X¹ represents a residue of an organic compound having two active hydrogen groups; and R¹ represents a residue of a dicarboxylic acid compound;

and (b) a cationic polymer compound.

26. (Previously presented) A method of producing an ink jet recording sheet comprising the steps of extruding a resin composition selected from the group consisting essentially of a polyamide, a polyester, and a polyolefin that constitutes a substrate layer into a sheet form, extruding a resin composition layer for ink jet recording into a sheet form, and overlaying the ink jet recording layer directly onto the substrate layer, wherein the ink jet recording layer comprises, (a) a major component of a water-absorbing polymer compound represented by the formula (I),

$$AX^1$$
 AR^1 (I)

wherein A consists of

$$-\left(\text{CH}_2\text{CH}_2\text{O} \right) - \left(\text{CH}_2\text{CHO} \right) - \left(\text{CH}_2\text{CH$$

with a manner of linkage therebetween being

$$-\left(CH_{2}CH_{2}O \right) + \left(CH_{2}CH_{2}O \right)$$

wherein m, n, and p represent integers greater than or equal to 1, and a weight ratio calculated on the basis of each recurrence number m, n, and p predetermined to be: $44 \times (m+p)/(molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms) <math>\times$ n = 94/6 to 80/20,

and the weight ratio calculated on the basis of each recurrence number m and p, p/(m+p) is predetermined to be more than or equal to 50 percent by weight;

Y represents a hydrocarbon group having two or more carbon atoms; X¹ represents a residue of an organic compound having two active hydrogen groups; and R¹ represents a residue of a dicarboxylic acid compound;

and (b) a cationic polymer compound.

27. (Previously presented) The method of claim 26, wherein the substrate layer and the ink jet recording layer are extruded concurrently while overlaying the ink jet recording layer onto the substrate layer.

28. (Previously presented) The ink jet recording sheet of claim 25, wherein the cationic polymer (b) has a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

$$-\left(CH_2CH_2\right)$$
 (II),

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III),

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (IV),

$$\begin{array}{c|c}
-(CH_2CH-) & R^4 \\
| & | \\
CONH-R^3-N-R^5 \cdot X^- \\
| & | \\
R^6 & (IV)
\end{array}$$

wherein R³ represents an alkylene group having 2 to 8 carbon atoms, R⁴ and R⁵, respectively, represent an alkyl group having 1 to 4 carbon atoms, R⁶ represents an alkyl group having 1 to 12 carbon atoms, an aryl alkyl group having 7 to 12 carbon atoms, or an alicyclic alkyl group having 6 to 12 carbon atoms, and X⁻ represents a halogen ion, CH₃OSO₃⁻, or C₂H₅OSO₃⁻.

29. (Previously presented) The ink jet recording sheet of claim 25, wherein the cationic polymer (b) has a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

$$+$$
CH₂CH₂ $+$ (II),

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III),

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (V):

wherein R³ represents an alkylene group having 2 to 8 carbon atoms, R⁴ and R⁵, respectively, represent an alkyl group having 1 to 4 carbon atoms, and X⁻ represents a halogen ion, CH₃OSO₃⁻ or C₂H₅OSO₃⁻.

- 30. (Previously presented) The ink jet recording sheet of claim 25 wherein a mixing ratio by weight of the water-absorbing polymer compound (a) and the cationic polymer compound (b) is between 50/50 and 99/1.
- 31. (Previously presented) The ink jet recording sheet of claim 25 further comprising (c) a cationic or nonionic surface active agent.
- 32. (Previously presented) The ink jet recording sheet of claim 31 wherein an amount of the cationic or nonionic surface active agent (c) is from 1% by weight to 10% by weight.

33. (Previously presented) A method in accordance with claim 26, wherein the water absorbing polymer compound (a) has a weight average molecular weight ranging between 10,000 and 300,000.

34. (Previously presented) A method in accordance with claim 26, wherein the cationic polymer (b) has a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by formula (II),

$$+$$
 CH_2CH_2 $+$ (II)

less than or equal to 15 mol% of an acrylate structural unit represented by formula (III),

wherein R² represents an alkyl group having 1 to 4 carbon atoms, and 1 mol% to 35 mol% of an acrylamide structural unit represented by formula (IV),

$$\begin{array}{c|c}
-(CH_2CH-) & R^4 \\
\hline
CONH-R^3-+N-R^5 \cdot X^- \\
R^6 & (IV)
\end{array}$$

wherein R³ represents an alkylene group having 2 to 8 carbon atoms, R⁴ and R⁵, respectively, represent an alkyl group having 1 to 4 carbon atoms, R⁶ represents an alkyl group having 1 to 12 carbon atoms, an aryl alkyl group having 7 to 12 carbon atoms, or an alicyclic alkyl group having 6 to 12 carbon atoms, and X⁷ represents a halogen ion, CH₃OSO₃⁷, or C₂H₅OSO₃⁷.

35. (Previously presented) A method in accordance with claim 34, wherein R³ represents an alkylene group having 2 to 8 carbon atoms, R⁴ and R⁵, respectively, represent an alkyl group having 1 to 4 carbon atoms, and X⁻ represents a halogen ion, CH₃OSO₃⁻ or C₂H₅OSO₃⁻.

36. (Previously presented) A method in accordance with claim 26, wherein a mixing ratio by weight of the water-absorbing polymer compound (a) and the cationic polymer compound (b) is between 50/50 and 99/1.

- 37. (Previously presented) A method in accordance with claim 26, further comprising (c) a cationic or nonionic surface active agent.
- 38. (Previously presented) A method in accordance with claim 37, wherein an amount of the cationic or nonionic surface active agent (c) is from 1% by weight to 10% by weight.